

Technical Report 1152

**Army Enlisted Personnel Competency Assessment
Program Phase I (Volume II): Demonstration
Competency Assessment Program Development
Report**

**Roy C. Campbell, Patricia A. Keenan,
Karen O. Moriarty, and Deirdre J. Knapp**
Human Resources Research Organization

Tonia S. Heffner
U.S. Army Research Institute

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Technical Review by

Elizabeth Brady, U.S. Army Research Institute
William Badey, U.S. Army Research Institute

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Program Phase I (Volume II): Demonstration
Competency Assessment Program
Development Report**

**Roy C. Campbell, Patricia A. Keenan,
Karen O. Moriarty, and Deirdre J. Knapp
Human Resources Research Organization**

**Tonia S. Heffner
U.S. Army Research Institute**

**Selection and Assignment Research Unit
Michael G. Rumsey, Chief**

**U.S. Army Research Institute for the Behavioral and Social Sciences
2511 Jefferson Davis Highway, Arlington, Virginia 22202-3926**

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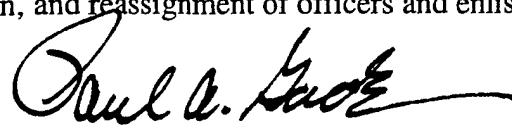
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FOREWORD

In April 2002, the Army Training and Leader Development Panel (ATLDP) released the results of its survey of 35,000 Noncommissioned Officers (NCOs). The ATLDP's recommendations included the need for regular assessment of Soldiers' technical, tactical, and leadership skills. The need for regular assessment of Soldiers coincides with the U.S. Army Research Institute for the Behavioral and Social Sciences' (ARI) research program on NCO development and assessment. ARI's research program began with *Soldier Characteristics of the 21st Century (Soldier21)* to identify potential knowledges, skills, and attributes (KSAs) for future Soldiers and continued with *Maximizing 21st Century Noncommissioned Officers Performance (NCO21)* to identify and validate potential indicators of the KSAs for use in junior NCO promotion. The *Performance Measures for 21st Century Soldier Assessment (PerformM21)* extends the research program with a three-phase effort to examine the feasibility of comprehensive competency assessment. The first phase is an investigation of the issues and possible resolutions for development of a viable Army-wide program including the Demonstration Competency Assessment Program (DCAP), which is a prototype for Army-wide competency assessment. The second phase extends the feasibility investigation through development of five Military Occupational Specialties (MOS) competency assessments as well as a self-assessment and development module to accompany the DCAP. The third phase is an analysis of the prototype program to provide recommendations on feasibility, resource requirements, and implementation strategies for competency assessment. This multi-volume report documents activities supporting the first goal of Phase I—issues impacting overall recommendations for Army-wide assessment—and also describes the development of the DCAP assessment. The prototype DCAP assessment and elements of the recommended delivery system will be pilot tested in Phase II of the project. Program design issues identified here will inform future deliberations about the design, implementation, and maintenance of an operational assessment program.

The research presented in this report has been briefed to the Deputy Chief of Staff, G-1, on 8 Oct 2003 and the Chief of Enlisted Professional Development, Directorate of Military Personnel Policy on 13 Nov 2003. It was briefed to the Sergeant Major of the Army on 28 Jan 2003 and 30 Mar 2004. It has been periodically briefed to senior NCO representatives from U.S. Army Training and Doctrine Command (TRADOC), Office of the G-1, U.S. Army Forces Command (FORSCOM), U.S. Army Reserve (USAR), and the Army National Guard (ARNG) as members of the Army Testing Program Advisory Team (ATPAT).

The goal of ARI's Selection and Assignment Research Unit is to conduct research, studies, and analysis on the measurement of attributes and performance of individuals to improve the Army's selection and classification, promotion, and reassignment of officers and enlisted Soldiers.



PAUL A. GADE
Acting Technical Director

Acknowledgements

U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) Contracting Officer Representatives

Dr. Peter Greenston and Dr. Tonia Heffner of ARI served as co-COR for this project, but their involvement and participation went far beyond the usual COR requirements. Their contributions and active input played a significant role in the production of the final product and they share credit for much of the outcome. Of particular note are their activities in conveying information about the project in briefings and presentations to Army Leadership on many important levels.

The Army Test Program Advisory Team (ATPAT)

The functions and contributions of the ATPAT, as a group, are documented in this report. But this does not fully reflect the individual efforts that were put forth by members of this group. Project staff is particularly indebted to CSM Cynthia Pritchett, Command Sergeant Major, U.S. Army Combined Arms Center and Fort Leavenworth. CSM Pritchett not only serves as the ATPAT Chairperson but has provided wise counsel and guidance in a number of distinct areas since the inception of the project in January 2003. It was through her initiative and recommendations that the ATPAT was established.

Serving as co-chair of the ATPAT is SGM Michael T. Lamb, Sergeant Major, Training and Doctrine Command, Deputy Chief of Staff for Operations and Training, Fort Monroe, Virginia. His involvement also has transcended the ATPAT activities described and we have come to rely on his assistance and involvement in areas too numerous to detail.

The other individual members of the ATPAT are:

SGM Thomas Clark
U.S. Army Human Resources Command

SGM Fredrick Couch
ARNG Training Division Sergeant Major

SGM John T. Cross
Center for Army Leadership (CAL)

CSM George D. DeSario
Command Sergeant Major
U.S. Army Armor Center

SGM Julian Edmondson
Personnel Policy Integrator, Army G-1

CSM Dan Elder
Command Sergeant Major
HQ, 13th Corps Support Command

CSM Victor Gomez
Command Sergeant Major
HQ, 95th Division

SGM Paul Harzbecker
G-3 Sergeant Major
HQ, Forces Command (FORSCOM)

SGM James Herrell
Sergeant Major, Ordnance Proponency
Office, Chief of Ordnance

SGM Enrique Hoyos
Sergeant Major, Army Training Support
Center (ATSC), HQ, TRADOC

CSM Nick Piacentini
Command Sergeant Major
U.S. Army Reserve Command (USARC)

SGM Gerald Purcell
Directorate Sergeant Major, Military
Personnel Policy, Army G-1

CSM Robie Roberson
Group Command Sergeant Major
653rd Area Support Group

CSM Otis Smith Jr.
Command Sergeant Major
U.S. Army Armor School

CSM Clifford R. West
Command Sergeant Major
U.S. Army Sergeants Major Academy

MSG Daphne Angell
309th Regiment, 78th Division

MSG Robert Bartholomew
Enlisted Career Manager, Ordnance
Proponency

MSG Monique Ford
Operations NCOIC
309th Regiment, 78th Division

MSG Fred Liggett
Promotion Policy Integrator, Army G-1

MSG Christopher Miele
Operations NCOIC
14th The Army School System (TASS)
Battalion

MSG Matt Northen
G-3, Forces Command (FORSCOM)

1SG Edwin Padilla
First Sergeant, HQ and HQ Detachment
2nd Battalion, 309th Regiment, 78th Division

MSG Jerome Skeim
Enlisted Manager for Reclassification
National Guard Bureau

**ARMY ENLISTED PERSONNEL COMPETENCY ASSESSMENT PROGRAM PHASE I
(VOLUME II): DEMONSTRATION COMPETENCY ASSESSMENT PROGRAM
DEVELOPMENT REPORT**

Executive Summary

Research Requirement:

The Army is changing to meet the needs of the 21st century. Soldiers at all levels must possess the interpersonal, technical, and organizational knowledge, skills, and other attributes to perform effectively in complex technical, information-rich environments, under multiple and changing mission requirements, and in semi-autonomous, widely dispersed teams. The Army needs an integrated Soldier assessment system to support these demands.

The need for Soldier assessment is most acute at the time of promotion into the Noncommissioned Officer (NCO) ranks. It is at this juncture that job competency merges with leadership and supervisory requirements and there are distinct changes in the concept of Soldiering. In June 2000, the Chief of Staff of the Army established the Army Training and Leader Development Panel (ATLDP) to chart the future needs and requirements of the NCO corps. After a 2-year study which incorporated the input of 35,000 NCOs and leaders, a major conclusion and recommendation was: "*Develop and sustain a competency assessment program for evaluating Soldiers' technical and tactical proficiency in the military occupational specialty (MOS) and leadership skills for their rank*" (Department of the Army, 2002).

To meet the Army's need for job-based measures, the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) instituted a 3-year program of feasibility research to identify a viable approach for development of a Soldier assessment system that is both effective and affordable. HumRRO is the prime contractor for this project, along with Job Performance Systems, Inc. (JPS). The ARI program (called PerformM21) has three phases:

- Phase I: Feasibility and Alternative Designs
- Phase II: Design Selection and Prototype Measure Development and Testing
- Phase III: Performance Measure Evaluation and System Recommendations

This report focuses on the procedures, methods, and products involved in the development of a prototype assessment measure. As this project evolved, it became known as the Demonstration Competency Assessment Program (DCAP).

Several significant events within the Army coincided with ARI's efforts in this area. The ATLDP recommendation resulted in the Office of the Sergeant Major of the Army (SMA) and the U.S. Army Training and Doctrine Command (TRADOC) initiating a series of reviews and consensus meetings with the purpose of instituting a Soldier competency assessment test. Ongoing efforts within the Army G-1 to revise the semi-centralized promotion system (which promotes Soldiers to the grades of E5 and E6) also were investigating the use of performance (test) based measures to supplement the administrative criteria used to determine promotion. Ultimately, the three interests (ARI, SMA/TRADOC, and G-1) coalesced and ARI sought to

incorporate the program goals and operational concerns of all Army stakeholders, while still operating within its research-mandated orientation.

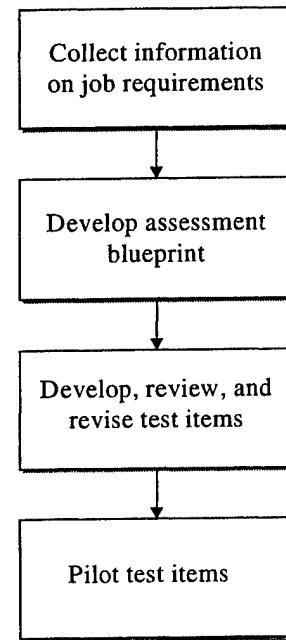
Procedure:

The fusion of the ARI project with the efforts of the SMA and TRADOC served to provide the demonstration test some specific operational parameters, which allowed a more focused developmental effort. We determined that the operational goal would be to have a knowledge or knowledge-based test of approximately 150 items that could be administered within about a 2-hour time frame via a web-connected computer. The test would be initially designed to be administered to E4 Soldiers being considered for promotion to E5 pay grade (Sergeant). A single test, suitable for all Soldiers, regardless of MOS and regardless of component (Active Army, United States Army Reserve, Army National Guard) would be developed.

Early in the project we constituted a group of senior NCOs – the Army Test Program Advisory Team (ATPAT) - to advise on the operational implications of Army assessment testing. The ATPAT serves two distinct purposes. First, it provides input for the needs analysis requirements of the project, primarily by providing insight into operational implications and real-world feasibility of the program. Second, it serves as the oversight group for development of the DCAP as well as a resource in identifying and developing content for the test. Additionally, the ATPAT is a working group that provides product reviews, subject matter expertise, and, as needed, assistance in the process of developing prototype instruments and trial procedures. An additional benefit of the ATPAT is to serve as a conduit to explain and promote the PerformM21 project to various Army agencies and constituencies.

The ATPAT met three times in 2003, providing guidance about (a) whether and how the assessment will be used in personnel-related areas; (b) the steps and organizational implications to implementing, maintaining, and growing an Army test; (c) identifying the considerations that must be taken into account to operationalize an Army-wide testing program; and (d) how the Army-wide test will fit with other programs and activities such as self-development, unit training, NCO Education System (NCOES), deployments, NCO Evaluation Record (NCOER) system, TDA staffing, transition, Soldier tracking and assignment, Future Force, and training publications and updates. In addition, the group discussed and provided expertise related to the determination and specification of the content domains of the DCAP. They have also helped to identify resources for test item development and field testing.

For the most part, the DCAP development followed standard instrument development steps, which are outlined in the figure shown to the right. Due to time and resource constraints, we were not able to conduct a typical job analysis for the prototype DCAP. We relied instead on our collective experience with the Army and guidance from the ATPAT. This input was used to develop a test blueprint, which is a map of the content to be tested. The careful



development of a blueprint for the content areas, subject areas, and tasks helps to ensure that the DCAP will cover the information that is important for Soldiers to know if they are to be promoted.

Following blueprint development, HumRRO staff developed items and adapted items from previous research projects (i.e., Select21 and Project A) (J. Campbell & Knapp, 2001; Knapp, 2003). Subject matter experts (SMEs) from the Army and within HumRRO reviewed these items. Reviews by subject matter experts (e.g., instructors, the ATPAT) ensures that the items are clearly written, accurately key correct and incorrect responses, are verifiable, and cover appropriate topics.

Findings:

The ATPAT members reviewed the draft content areas and assigned them weights, which determined what proportion of the test would be allocated to each of four content areas. The result of this exercise was that Common Tasks Skill Level One (SL1) would comprise 46.2% of the test while Skill Level Two (SL2) Common Tasks would cover 13.5%; History/Army Values would encompass 15.4%; Leadership 13.1%; and Training would constitute 9.11% of the test. The ATPAT also rated the criticality of subjects within the content areas.

An additional part of the promotion assessment will be the administration of a situational judgment test that was developed for the NCO21 project (Ford et al., 2000; Knapp et al., 2002) – the Leadership Judgment Exercise (LeadEx). The LeadEx was shown to be predictive of success at the E5 and E6 pay grades; that is, Soldiers who performed well on the LeadEx also were highly rated on assessments performed by their supervisors. The LeadEx assesses eight performance dimensions: (1) Problem solving and decision making skill; (2) Motivating, leading, and supporting subordinates; (3) Directing, monitoring, and supervising work; (4) Training others; (5) Relating to and supporting peers; (6) Team leadership; (7) Concern for Soldier quality of life; and (8) Cultural tolerance.

Utilization of Findings:

The pilot DCAP will be administered via the Internet to Soldiers at proctored sites in the continental United States (CONUS) and overseas (OCONUS). After comparing many systems, Questionmark's Perception® software was selected as the best product on the market to meet the program's needs, both in instrument development and for computer based delivery. Administration will be through the Army's Digital Training Facilities (DTF), which are part of the Army's existing computer based program designed to deliver the Army's distributed learning training program.

During Phase II of PerformM21, the DCAP core assessment will be pilot tested. The pilot test is slated to begin in early 2004 and will target administration to between 600 and 1000 Soldiers in the Active Army, Army National Guard, and United States Army Reserve.

We will develop and distribute preparation materials that Soldiers can use as a guide in preparing for the pilot test. This guide will provide information about the assessment program, the content areas of the assessment, preparation strategies, and references for the manuals used in development of the test content.

Planned analysis includes item statistics (e.g., percent correct, point-biserial correlations) for each item. Items exhibiting poor item statistics will be flagged for review and modification or deletion. We will also analyze the data to determine whether there are differences in scores associated with gender, race/ethnicity, rank, or service component (USAR, ARNG, Active Army). Depending on distribution of the pilot test sample, we will also try to analyze results based on Army jobs. Most likely, we will collapse jobs into combat, combat support, and combat service support classifications. We will compute reliability estimates for the entire assessment, as well as for sections of the instrument and examine the correlation between scores on the four test sections, particularly Leadership and LeadEx scores.

**ARMY ENLISTED PERSONNEL COMPETENCY ASSESSMENT PROGRAM PHASE I
(VOLUME II): DEMONSTRATION COMPETENCY ASSESSMENT PROGRAM
DEVELOPMENT REPORT**

CONTENTS

	Page
Introduction and Background.....	1
Purpose of the Report.....	1
Sources of Guidance and Input	2
Sergeant Major of the Army	2
The Army Test Program Advisory Team	3
Overview of the DCAP Development Process	5
Army-Wide Requirements Analysis	5
Blueprint Development	8
Overview.....	8
Procedure	8
Item Tracking.....	10
Leadership Judgment Exercise (LeadEx)	11
Item Development and Review	12
Procedure	12
Supporting Software and Computer Systems	14
Plan for Pilot Testing.....	15
Overall Test Administration	15
Solider Preparation	16
Soldier Feedback	16
Data Analysis.....	16
Conclusions	16

List of Appendices

Appendix A: Outlines of Content Areas

Appendix B: Criticality Ratings for DCAP Subject Areas

Appendix C: Mean Weights and Standard Deviations for Common Task Areas

CONTENTS (Continued)

Appendix D: Means and Standard Deviations of Rankings of Tasks within Subject Areas for SL1 and SL2 Common Tasks

List of Tables

Table 1. Test Blueprint Weights Provided by ATPAT	8
Table 2. DCAP Blueprint	10
Table 3. Resources Used for Item Development.....	12
Table 4. Summary of PerformM21 Item Review.....	13
Table 5. DCAP Item and Point Distribution	14

List of Figures

Figure 1. Steps in DCAP development.	5
Figure 2. Elements of Army-wide requirements analysis.....	6
Figure 3. Sample LeadEx item.....	12
Figure 4. Sample non-traditional DCAP item.....	14

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Introduction and Background

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The need for Soldier assessment is most acute at the time of promotion into the Noncommissioned Officer (NCO) ranks. It is at this juncture that job competency merges with leadership and supervisory requirements and there are distinct changes in the concept of Soldiering. In June 2000, the Chief of Staff of the Army established the Army Training and Leader Development Panel (ATLDP) to chart the future needs and requirements of the NCO corps. After a 2-year study which incorporated the input of 35,000 NCOs and leaders, a major conclusion and recommendation was: "*Develop and sustain a competency assessment program for evaluating Soldiers' technical and tactical proficiency in the military occupational specialty (MOS) and leadership skills for their rank*" (Department of the Army, 2002).

The Army does not currently have an objective competency assessment test as part of its promotion system. In the early 1990s, the Army abandoned its Skill Qualification Test (SQT) program due primarily to maintenance, development, and administration costs. Cancellation of the SQT program left a void in the Army's capabilities for assessing and forecasting job performance qualification. Re-instituting a new performance assessment system must address the factors that forced abandonment of the SQT. Since then, technological advances have occurred that can reduce the developmental and administrative burdens encountered with SQT and will play a critical role in a new performance assessment system.

Purpose of the Report

To meet the Army's need for job-based measures, the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) instituted a 3-year program of feasibility research to identify a viable approach for development of a Soldier assessment system that is both effective and affordable. HumRRO is the prime contractor for this project, along with Job Performance Systems, Inc. (JPS). The ARI program (called PerformM21) has three phases:

- Phase I: Feasibility and Alternative Designs
- Phase II: Design Selection and Prototype Measure Development and Testing
- Phase III: Performance Measure Evaluation and System Recommendation

Phase I of the program (which corresponds roughly to year one of the 3-year overall effort) had three primary goals:

- Goal 1: Determine the feasibility and inherent trade-offs in the development of an operational and affordable individual performance assessment system for Army enlisted Soldiers.
- Goal 2: Identify the major design considerations and elements of such a system.
- Goal 3: Develop a prototype assessment measure.

Although all three goals are interrelated, this report will focus on the procedures, methods, and products involved in meeting Goal 3: The development of a prototype assessment measure. As the product of this goal evolved, it became known as the Demonstration Competency Assessment Program (DCAP).

This report describes the major steps performed and products that were involved to produce a prototype test. Where appropriate, it includes the procedures that were involved; however, it is not a chronology of the development, nor does it document all the decision points. The development of the DCAP is presented in the following sections.

- Sources of Guidance and Input
- Overview of DCAP Development Process
- Army-wide Requirements Analysis
- Blueprint Development
- Item Development and Review
- Plan for Pilot Testing
- Conclusions

Sources of Guidance and Input

Sergeant Major of the Army

The impetus to include individual Soldier assessment research in ARI's programmed requirements began prior to 2000 and was based on a number of considerations regarding trends and requirements in Soldier selection, classification, and qualifications. Concurrently, there were several significant events within the Army that coincided with ARI's efforts in this area. The aforementioned ATLDP recommendation resulted in the Office of the Sergeant Major of the Army (SMA) and the U.S. Army Training and Doctrine Command (TRADOC) initiating a series of reviews and consensus meetings with the purpose of instituting a Soldier competency assessment test. Ongoing efforts within the Army G-1 to revise the semi-centralized promotion system (which promotes Soldiers to the grades of E5 and E6) also were investigating the use of performance (test) based measures to supplement the administrative criteria used to determine promotion. Ultimately, the three interests (ARI, SMA/TRADOC, and G-1) coalesced and ARI sought to incorporate the program goals and operational concerns of all Army stakeholders, while still operating within its research-mandated orientation.

The fusion of the ARI project with the efforts of the SMA and TRADOC caused some alteration in the original goals of the ARI demonstration test. However it also served to provide

the demonstration test some specific operational parameters, which allowed a more focused developmental effort. Working through TRADOC and utilizing primarily Command Sergeant Major channels and resources, the SMA issued the following implementation guidance and goals (Heffner, 2003):

- The test is to be used for promotion purposes with direct promotion application for the semi-centralized (E5, E6) promotion system.
- The test and its supporting system must serve the whole Army – Active Component, Army Reserve, and Army National Guard.
- Assessment will start with Specialist/Corporal (E4) at Skill Level 1 (SL1) and will eventually include Sergeant First Class (E7) at SL4.
- Assessment will be computer-administered via the Internet.
- Initially, the assessment will be on a shared, common core of subjects pertinent to all Soldiers (Army-wide). Later, a Military Occupational Specialty (MOS)-specific assessment can be added.
- Content of the initial assessment will include:
 - Leadership
 - Training
 - Army and NCO History and Army Values
 - Basic Soldier Skills (Common Tasks)

Ultimately, we incorporated all of the SMA's guidance into the DCAP, although the issue with the most immediate impact was the content guidance. We determined that the operational goal would be a test that could be administered within about a 3-hour time frame via a web-connected computer. This translates to an instrument with approximately 150 items. The test would be initially designed to be administered to Soldiers in pay grade E4 being considered for promotion to pay grade E5 (Sergeant). A single test, suitable for all Soldiers, regardless of MOS and regardless of component (Active Army, United States Army Reserve, Army National Guard) would be developed. The test would be knowledge or knowledge-based, essentially in a multiple-choice format.

The Army Test Program Advisory Team

Early in the project we constituted a group to advise on the operational implications of Army assessment testing, primarily as part of the needs analysis aspect of the project. Simultaneously, this group took on a role as Test Council for the DCAP. This group is called the Army Test Program Advisory Team (ATPAT) and it has the following characteristics:

- It is made up of NCOs, mostly in the Master Sergeant (E8) and Sergeant Major (E9) levels.
- It includes representatives from TRADOC, HQ, Forces Command (FORSCOM), Combined Arms Center (CAC), Center for Army Leadership (CAL), Army Training Support Center (ATSC), Army G-1, Sergeant Major Academy (USASMA), and specific organizational representation including the U.S. Army Armor Center and School, the U.S. Army Ordnance Center and School, and the 13 Corps Support Command (COSCOM).

- It includes representatives from the Reserve force including HQ, Army National Guard Bureau (ARNGB), HQ, Army Reserve Command (USARC), and unit representatives from the 95th Division (Institutional Training), 653rd Area Support Group (ASG), and the 78th Division (Training Support)
- It is co-chaired by two Sergeants Major endorsed by the ATPAT body. Chairs are responsible for determining the scope and direction of the ATPAT involvement and for setting the ATPAT meeting agendas. They also serve as the point of contact for policy determinations and clarifications when military representation is needed outside of scheduled ATPAT meetings.
- It has a flexible membership. Although there is a solid core ATPAT group, there have been 25 individual representatives to the ATPAT.

The ATPAT serves two distinct purposes. First, it provides input for the needs analysis requirements of the project, primarily by providing insight into operational implications and real-world feasibility of the program. Second, it serves as the oversight group for development of the DCAP as well as a resource in identifying and developing content for the test. Additionally, the ATPAT is a working group that provides product reviews, subject matter expertise, and, as needed, assistance in the process of developing prototype instruments and trial procedures. An additional benefit of the ATPAT is to serve as a conduit to explain and promote the PerformM21 project to various Army agencies and constituencies.

The ATPAT met three times in 2003, providing guidance in four areas:

- *Utilization Strategies* – Defining the scope of the program and how the test will be used. That is, whether and how it will be used in personnel management, promotion, career development, training, readiness, retention, and transition.
- *Implementation Strategies* – Identifying the steps to implementing, maintaining, and growing an Army test, short- and long-term goals, and organizational implications to be considered in phased implementation.
- *Operational Strategies* – Identifying the considerations that must be taken into account to operationalize an Army-wide testing program (for developers, administrators, and users).
- *External Considerations* – How the Army-wide test will fit in with other programs such as self-development, unit training, NCO Education System (NCOES), deployments, NCO Evaluation Record (NCOER) system, TDA staffing, transition, Soldier tracking and assignment, Future Force, and training publications and updates.

The ATPAT has been extremely helpful in discussions in all of these areas. At each meeting, significant portions of the discussion were centered on the nature of the assessment (i.e., self-assessment vs. promotion). Other significant discussion and exercise centered on the determination and specification of the content domains of the DCAP. (These are discussed in more detail in the following sections.) They have also helped to identify resources useful for test item development and field testing.

Overview of the DCAP Development Process

In its general approach, the DCAP development followed standard instrument development steps, as shown in Figure 1. Due to time and resource constraints, we were not able to conduct a typical job analysis for the prototype DCAP. We relied instead on our collective experience with the Army and guidance from the ATPAT. This input was used to develop a test blueprint, that is, a map of the test instrument content. Following blueprint development, HumRRO staff wrote new items and adapted items from previous research projects (i.e., Select21 and Project A) (J. Campbell & Knapp, 2001; Knapp, 2003). SMEs from the Army and HumRRO reviewed these items. The items will be pilot tested in 2004.

Army-Wide Requirements Analysis

It is an axiom of test development that the most crucial part of the process is the analysis phase, which identifies what parts of the job, or aspects of performance should constitute the test domain and subject matter. Preferably, this is accomplished through systematic surveys and/or field visits with incumbents and supervisors to provide not only content identification but also measures of criticality and rankings. Such detailed and systemic approach to defining requirements is necessary to ensure that the test is truly reflective of incumbents' job performance. It directly affects the utility and acceptability of the test. We did not do that for this initial DCAP – time and other resource constraints placed extreme limitations on this very important phase. We relied on the SMA guidance for content and on the ATPAT as a resource to provide operational interpretation of that guidance as well as application of job relevant criteria. This was satisfactory for an initial approach, given the project limitations. It should not be seen as an acceptable long-term approach.

Figure 2 depicts the plan for determining DCAP content requirements. This depicts both a long-term concept that would rely on survey data and the establishment of a senior NCO Test Council and a near-term plan for the development of the prototype DCAP utilizing the ATPAT and the current resources. As the plan indicates, success of the process rests heavily with the ATPAT, which has provided solid guidance on content, identified resources we could use in developing the test, and provided important information about resource limitations and other constraints we are likely to encounter during the process. However, it is also important to recognize that the future program must embody a fuller analysis program as previously outlined. The arrows in Figure 2 indicate the information flow generated to and from an analytic survey function that is essential to a long term program.

During the analysis, the first step was to try to identify the tasks or knowledge areas that make up the content areas. The Army is task oriented; all training is task based and "task" has a very specific, performance oriented definition and use. But this classic and somewhat rigid definition did not fit all of the content areas, which differ quite a bit from each other:

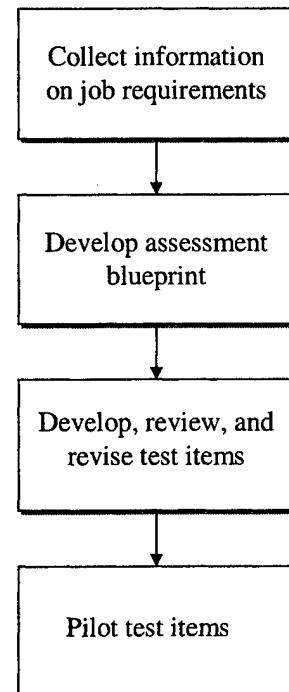


Figure 1. Steps in DCAP development.

Basic Soldier Skills (Common Tasks). This area is made up of traditional Army tasks with action verb task statements, conditions, standards, and performance measures. All tasks are discrete, observable actions. Moreover, the Army identifies tasks by the Skill Level that is responsible for acquiring and mastering them (i.e., SL1, SL2). There are two complete doctrinal sources for this domain: the *Soldier's Manual of Common Tasks Skill Level 1* (Department of the Army, 2003), and the *Soldier's Manual of Common Tasks Skill Level 2, 3, and 4* (Department of the Army, 2003). This area is well defined and presented no problems in analysis other than obtaining criticality and importance ratings.

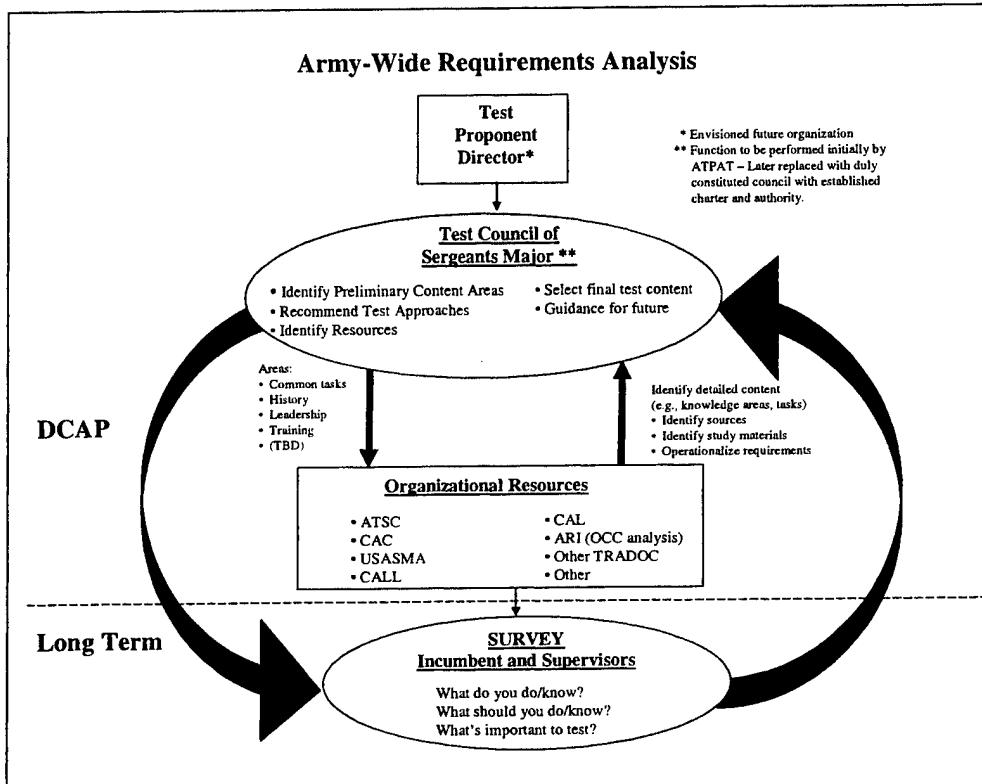


Figure 2. Elements of Army-wide requirements analysis.

Leadership. Army leadership is a broad, somewhat amorphous area, most often described in terms of attributes, exemplars, characteristics, anecdotes, and principles. Doctrinally, the primary sources of leadership information are the *Soldier's Guide* (Department of the Army, 2004), the *Army Noncommissioned Officer Guide*, (Department of the Army, 2002), and *Army Leadership: Be, Know, Do* (Department of the Army, 1999). Most of these resources are broad-based discussions designed to motivate and inspire as much as to impart knowledge. Moreover, leadership is not Skill Level specific. There are aspects of leadership that are cumulatively acquired over time and grade (experience) and are especially challenging to impart or imply boundaries, limitations, or reasonable expectations for persons at SL1. This area posed (and continues to pose) extreme challenges in defining and specifying job relevant knowledge or performance areas.

Training. Army training is doctrinally supported by the documentation in the *Soldier's Guide* (Department of the Army, 2004), the *Army Noncommissioned Officer Guide*, (Department of the Army, 2002), and *Battle Focused Training* (Department of the Army, 2003). As an analytic challenge, it falls somewhere between Basic Soldier Skills and Leadership. That is, there are some specific tasks but also a lot of soft skill, principle-based, motivational based requirements. Like Leadership, the source documentation does not make any Skill Level designation or distinction. And since training, even at its lowest level, is doctrinally an NCO (SL2) requirement, even the more task-based requirements have dubious SL1 application.

History and Army Values. From an analysis standpoint, this area was the most difficult. Doctrinally, the sources for this area are the *Soldier's Guide* (Department of the Army, 2004) and the *Army Noncommissioned Officer Guide* (Department of the Army, 2002). This area has all the problems associated with Leadership, with which it shares a lot of overlap in content. Moreover, there is very little job relevance to this area. Army Values, in particular, while they are important to instill and to reinforce, are often exemplified in performance by their absence. Army history also can easily lead to identifying and testing the trivial. This is a sensitive area because of the commitment of Army leadership to reinforce Army values. Identification of inherent analytic problems is not meant to denigrate the vitality of these areas in the Army Soldierization program. However, future job analysis should pay particular attention to defining this area based on job data, if possible.

The end approach to the areas of defining Leadership and Training was for knowledgeable project staff to cull the doctrinal literature for areas that seemed to provide some operational and testable content, and then to translate these into statements of knowledge areas. For History/Values, the approach was somewhat similar. History was divided into broad topical times or historical events. The Values are simply listed as the seven Army values.

This approach worked for the initial review but presented problems throughout development. To start with, the listings are titles only with no descriptions of what is entailed particularly from a knowledge or performance area. Moreover, because the statements are nonstandardized and not necessarily part of the Army performance specifications, reviewers often put their own interpretation on what the statement involved, particularly when they thought about the statements in application to SL1 Soldiers. Finally, some areas (such as History) are just too overwhelming to be approached in this manner; the idea that, for example, World War II can be "covered" in a single statement borders on the ludicrous. Nonetheless, this approach provided a start and, in the end, we were able to extract testable content from the list. But analysis and definition of these domains must continue and must be improved, as suggested by the long-term plan depicted in Figure 2.

Blueprint Development

Overview

A test blueprint specifies the content of a test and the degree to which each content area is covered (e.g., the percentage of the DCAP items that will assess knowledge of leadership principles). Blueprints typically reflect the results of job analyses and/or the response of extremely knowledgeable SMEs. In this case, we relied on the input of the ATPAT to develop a solid blueprint for the DCAP. Blueprints are developed in detail; they specify the test approach by content area and also by subjects or tasks within each content area. The result was a comprehensive blueprint for a 150-item assessment.

Procedure

Prior to the ATPAT's first meeting, HumRRO staff developed draft outlines of the material that might be covered in the content areas of Leadership, Training, and History and Values. (These outlines are in Appendix A.) For the Common Tasks; the table of contents from the Soldier's Manual of Common Tasks (SMCT) was used to provide an outline of that content area. The ATPAT reviewed these materials and briefly discussed each area. Following this discussion, we asked the ATPAT members to weight the content areas to determine what proportion of the DCAP each would have. Specifically, we asked them to apportion 100 points between the four areas.

The participants went through this activity once, and then discussed their rationale for the weights they provided and the overall results. During this discussion, the ATPAT indicated that for Common Tasks, the test should include both Skill Level 1 and Skill Level 2 items. The weighting exercise was then repeated with the Common Tasks broken out by Skill Level. A final discussion and weighting was conducted and we calculated the average weight for each content area. These final weights and the number of items are presented in Table 1.

Table 1. Test Blueprint Weights Provided by ATPAT

Content Area	Percent of Test	No. of items on a 150-item test
Common Tasks: SL1	46.2	69
Common Tasks: SL2	13.5	20
History/Army Values	15.4	23
Leadership	13.1	20
Training	11.9	18

Because most of the content areas were very broad, there were more subjects/tasks in each content areas than could be covered on a 150-item test. It was therefore necessary to make judgments about which subjects/tasks were important enough to keep and which could be dropped. At their second meeting, the ATPAT reviewed the subject areas (see Appendix A) and assigned subjective characterizations of Low Value Content (LVC) or High Value Content (HVC) to the sub-areas. The goal was to eliminate LVC subject areas from the DCAP. The criteria to eliminate LVC were (a) inappropriateness for SL1 promotion candidates, (b)

testability of content in DCAP format, (c) size (percentage) of the content area weighting, and (d) comparison with HVC subject areas.

In this discussion, the ATPAT deleted nine subject areas from Training and 17 subject areas from Leadership. For the Common Tasks, they again reviewed a presentation of the table of contents from the Soldier's Manual of Common Tasks (SMCT) (SL1 and SL2). They did not suggest dropping any items from the Common Tasks, however they did discuss the option of tracking for some Common Tasks, particularly those that were weapons related or equipment specific. In a tracking approach, it would be necessary to identify (and verify) what item of equipment the tested Soldier was assigned or most familiar with and test only that item.

To provide the information for decisions about test content, ATPAT members were tasked to provide criticality ratings for each subject area or task for the content areas of Leadership, Training and Common Tasks. (History/Army Values was handled somewhat differently as discussed below.) The instructions for this exercise directed them to "rate each of the subject areas in terms of its importance for inclusion in testing relative to the other...subject areas." They made these judgments using a 5-point scale in which 1 = "much less important than other areas," 3 = "about the same as other areas," and 5 = "much more important than other areas." (See Appendix B for average ratings for all subject areas for the content areas Leadership, Training, and Common Tasks.)

The Common Tasks areas presented some unique challenges, primarily because of the scope of the task domain (112 individual tasks). To make this more manageable, these individual tasks were organized under 22 broad "subject areas." In a follow-up exercise, the ATPAT provided additional judgments for these Common Task areas and tasks. First, they weighted each of the subject areas by allocating 100 points among the areas to determine what proportion of the test should be devoted to each area. Twelve SMEs completed the weighting exercise; the results of which are shown in Appendix C. Second, they rank ordered the individual tasks within each subject area such that they ranked the most important task "1," the second most important task "2," and so forth. The results of these exercises are shown in Appendix D.

We had planned to select which subject areas and/or tasks to include in a test by selecting those that received a criticality rating at or above 3.5 from the 5-point criticality scale rating exercise. However, that cutoff left us with too many areas to cover in the DCAP. Recall that the blueprint for the content areas (see Table 1) specified the number of test items to be written for each area. For example, it calls for 18 items on Training. However, there are 13 subject areas within Training, which would mean that there would be fewer than two items for each subject area. Therefore, project staff reviewed the final items and further reduced the number of subject areas to be covered on the test. The result of the review was that five top-rated subject areas were identified for Leadership and four for both Training, and History/Values. The ATPAT reviewed this revised blueprint at their third meeting. They accepted the document, with only one change. They replaced "Identify the principles of BE, KNOW, DO" with "Know the steps in troop leading procedures (TLP)" with the reasoning that the first is subsumed by the latter. The final blueprint is shown in Table 2.

Table 2. DCAP Blueprint

	Percentage of Test	Number of Items
<i>Common Tasks Skill Level 1</i>	46	69
First Aid		12
M16 Rifle/M4 Carbine/M9 Pistol		11
Nuclear, Biological, & Chemical (NBC)		6
Communicate: Radio & Telephone		6
Combat Techniques (Survive)		5
Navigate, Mounted & Dismounted		5
Defense Measures: Camouflage, SALUTE, OPSEC		4
M60 Machine Gun/M249 SAW/M240B		4
Individual Conduct & Laws of War		3
Hand Grenades & Land Mines		3
Remains Reporting & Handling		2
Caliber .50 M2 Machine Gun		2
M203 40mm Grenade Launcher		2
MK19 40mm Grenade Launcher Machine Gun		2
M136 Launcher AT4 Light Anti-Tank Weapon		2
<i>Common Tasks Skill Level 2</i>	14	20
Combat Techniques (Survive)		4
First Aid: MEDEVAC, Preventive Medicine		4
Equipment Checks: PMCS, Supply Discipline, Property Accountability		3
Defense Measures: Squad Defense		3
Navigate: Map Overlays		2
Risk Management: Accident Prevention		2
Nuclear, Biological, & Chemical (NBC)		2
<i>History/Values</i>	15	23
Army values		7
Courtesy & customs		7
Volunteer Army		5
End of Cold War		4
<i>Leadership</i>	13	20
Identify the leadership duties, responsibilities, authority, & requirements of officers & NCOs		4
Know the policies & procedures of the chain of command & of the NCO support channel		4
Know the steps in Troop Leading Procedures (TLP)		4
Know the principles of discipline		4
Identify the risk management process		4
<i>Training</i>	12	18
Train subordinates		5
Prepare for and conduct preparatory marksmanship training (PMT)		5
Identify the roles & responsibilities of the NCO in training		4
Prepare for and conduct drill & ceremonies		4

Item Tracking

One important factor considered in item development and administration is tracking. Tracking is an assessment technique wherein a set of items (i.e., a module) is administered to a subset of the participants. The ATPAT suggested considering tracking for some weapons tasks within the Common Tasks because not all Soldiers will be equally familiar with all weapons, and it would be unfair to assess their knowledge of a weapon with which they have little or no experience. It might be necessary to track other areas, depending on a Soldier's assignment or unit. One method to handle tracking would be to ask participants to complete a computerized background information form prior to beginning the assessment. This form could ask Soldiers, among other things, whether they use various personal and/or crew-served weapons. For example, armor Soldiers (MOS 19K/19D) typically carry an M9 pistol rather than an M16 rifle as a personal weapon. If they indicate this on the background form, they will be presented a test module about the use and maintenance of the M9 rather than the M16.

However, the decision to permit tracking is not a trivial one. Tracking is primarily useful under conditions where the (a) test is being used as a criterion, and (b) tracking can be done by unit. If individuals were allowed to decide which track to take (particularly in an operational assessment), the situation could present some unknown implications about test equivalency and comparability and whether there are advantages to taking one track or another. For example, there are not necessarily comparable or equivalent choices to be made between many weapons (i.e., it may not be an either/or situation). This is complicated by the fact that not all Soldiers will have a similar level of experience with the weapons they nominally use.

The goal is to avoid tracking in the core test. One approach is to develop items on such basic knowledges that all Soldiers could be expected to have a certain level of familiarity regardless of the particular conditions of their assignment. We will also seek to collect so-called "recency and frequency" information during the pilot to determine the levels of examinee involvement with all tasks. This will provide needed information for determining tracking guidance for an operational test.

Leadership Judgment Exercise (LeadEx)

Although it has not been included in the test blueprint, we also intend to administer a situational judgment test that was developed for the NCO21 project (Ford et al., 2000; Knapp et al., 2002) - the Leadership Judgment Exercise (LeadEx). The LeadEx was shown to be predictive of success at the E5 and E6 pay grades; that is Soldiers who performed well on the LeadEx also were rated highly on performance assessment evaluations obtained from their supervisors. A sample item is shown in Figure 3. The LeadEx assesses eight performance dimensions:

1. Problem Solving and Decision Making Skill
2. Motivating, Leading, and Supporting Subordinates
3. Directing, Monitoring, and Supervising Work
4. Training Others
5. Relating to and Supporting Peers
6. Team Leadership
7. Concern for Soldier Quality of Life
8. Cultural Tolerance

Instructions: For each item, mark which course of action you would be MOST likely to follow with an "M" and mark the choice you would be LEAST likely to choose with an "L."

As a junior NCO, you need to counsel a subordinate. What would be your priority when preparing for and conducting the counseling?

- a. Prepare a course of action that you want the Soldier to follow
- b. Plan to guide and encourage the Soldier to arrive at his own solutions
- c. Focus on the sanctions and rewards that you control
- d. Follow the outline of the DA for 4856-R, General Counseling Form

Figure 3. Sample LeadEx item.

Item Development and Review

Procedure

HumRRO staff used a variety of resources to write the DCAP items, including field manuals, training materials, and SMEs. A list of doctrinal publications used in development is in Table 3. Project staff developed items based on these resources and also incorporated items from related projects (e.g., Project A and Select21). All DCAP items were subjected to an iterative review process, including both internal and external reviews. These reviews considered the currency of item content (e.g., in terms of technology and/or procedures) and how well each item adhered to the task requirement. HumRRO project staff implemented revisions, updated items, and wrote additional questions as necessary to replace dropped items.

Table 3. Resources Used for Item Development

Title	Manual/Publication	Publication Date
The Army Noncommissioned Officer Guide	FM 7-22.7	23 December 2002
Army Leadership Be, Know, Do	FM 22-100	August 1999
Battle Focused Training	FM 7-1	15 September 2003
Drill and Ceremonies	FM 3-21.5	7 July 2003
Flags, guidons, streamers, tabards, and automobile and aircraft plates	Army Regulation 840-10	1 November 1998
IET Soldier's Handbook	TRADOC Pamphlet 600-4	1 April 2001
Rifle Marksmanship M16A1, M16A2/3, M16A4, and M4 Carbine	FM 3-22.9	24 April 2003
Risk Management	FM 100-14	23 April 1998
Salutes, Honors, and Visits of Courtesy	Army Regulation 600-25	1 September 1983
The Soldier's Guide	FM 7-21.13	February 2004
Soldier's Manual of Common Tasks Skill Level 1	Soldier Training Publication No.21-1-SMCT	February 2003
Soldier's Manual of Common Tasks Skill Levels 2, 3, and 4	Soldier Training Publication No. 21-24-SMCT	February 2003
Training the Force	FM 7-0	22 October 2002

Content for the History/Army Values section of the assessment was based primarily on the History and Courtesies and Customs chapters of the draft *Soldier's Guide* as these were the most relevant to this section. The content for the History section was not developed in the same manner as the other sections. Instead, an outline (see Appendix A) was presented to the ATPAT to get their input as to what topics should be emphasized consistent with their earlier weighting of this content area (15.4% of the DCAP). The ATPAT suggested we stay at a relatively broad level. In particular they wanted Courtesies and Customs and Army Values to account for half of the History/Army Value test content area. Specific recommendations included items concerning the purpose of the hand salute and proper display of the flag. For Army Values, vignettes or definitional items were suggested. The ATPAT wanted the other half of the assessment to cover the Army Birthday, the volunteer Army, the end of the Cold War, and the attacks on 11 September 2001. Supplemental resources for the History items include the *IET Soldier's Handbook; Salutes, Honors, and Visits of Courtesy; and Drill and Ceremonies*.

SMEs from the NCO Academies at Fort Knox and Fort Eustis reviewed the Common Tasks, History/Army Values, Leadership, and Training sections' items. We also targeted the Center for Army Leadership (CAL), the Military History Instructional Support Team (MHIST), and the United States Army Sergeants Major Academy (USASMA) as the primary reviewers in the areas of History/Army Values, Leadership, and Training content areas. Table 4 summarizes the DCAP review process.

Table 4. Summary of PerformM21 Item Review

Content Area	Internal HumRRO	Ft. Eustis NCOA SMEs	Ft. Knox NCOA SMEs	CAL/CSI/ MHIST SMEs	USASMA/ TRADOC Staff	Select21 SMEs
SL1	X	X	X			X*
SL2	X	X	X			
History/Values	X	X	X	X	X	
Training	X	X	X	X	X	
Leadership	X	X	X	X	X	

Note. CAL = Center for Army Leadership, CSI = Combat Study Institute, NCOA = Noncommissioned Officer's Academy, MHIST = Military History Instructional Support Team, USASMA = United States Army Sergeants Major Academy.

* Items included in the DCAP separately reviewed by SME during the past 10 months as part of the Select21 Project.

Currently, the DCAP item bank contains 274 items. The DCAP is intended to be a 150-item assessment. It is anticipated that based on the results of the pilot tests, some items will be dropped. Also, to take advantage of computer based testing, it is possible to deviate from the traditional four-choice, one-correct format of traditional paper-based testing and incorporate matching, "drag and drop," "select all that apply," and ranking items. The result is that some items are worth more points than others. An example of this computer-based approach is shown in Figure 4.

For this sample item, a possible scoring scheme would have a Soldier earn one point for each correct option selected and one point for each incorrect option *not* selected up to a

maximum of nine points. Partial credit could be available as well. For example, a Soldier who selected options a, b, and g would earn four points—one each for correctly selecting options a and b, and one each for correctly *not* selecting options h and i. As shown in Table 5, the existing 274 items have a potential of 405 scoring points. However, final scoring designs have not yet been decided; they must also consider reliability weights and coverage. For example, having a single item worth a large number of points relative to other items could adversely impact the reliability of the test. A number of different options will be explored.

When making a mission risk assessment, what factors should be considered? *

Select all that apply.

a. Weather

b. *Inherent dangers of equipment to be used*

c. Troop training and proficiency

d. Environmental concerns

e. Complexity of the mission

f. Protective equipment and capabilities

g. Enemy capabilities

h. Other courses of action (COA) available

i. Gender of troops

* Italicized options are correct.

Figure 4. Sample non-traditional DCAP item.

Table 5. DCAP Item and Point Distribution

Content Area	No. of Items in Item Bank	No. of Points
Common Tasks: SL1	152	192
Common Tasks: SL2	38	57
History/Army Values	22	27
Leadership	33	69
Training	29	60
<i>Total</i>	<i>274</i>	<i>405</i>

Supporting Software and Computer Systems

The DCAP will be computer administered to Soldiers at proctored sites across CONUS and overseas. After comparing many systems, HumRRO selected Questionmark's Perception® as the best test development and test administration product on the market to meet the program's needs. From a test development perspective, Perception® provides several capabilities that make it an ideal platform for computerized knowledge and skill assessment. First, it has the capability to use a variety of question types, including multiple-choice, matching, ranking, Likert-type scales, and identifying appropriate sequences of steps. In addition, the software allows use of

graphics, illustrations, photographs, and video clips. The use of pictures and video reduces the reading level required to take the exam and, consequently reduces the risk of adverse impact often found with use of job knowledge tests. It also increases the fidelity of the items, making the questions more performance oriented. For example, it is possible to ask a respondent to drag and drop pieces to "build" a unit symbol. That makes it possible to tap a Soldier's ability to apply knowledge rather than just to select the correct symbol from a group presented. Perception® is a commercial off-the-shelf system (COTS) which HumRRO has purchased but which would be available to the Army or other test developers in the future.

The other aspect of a computer based test system is the delivery system which would provide a portal to the DCAP test during administration. We concentrated on existing Army systems and identified the Digital Training Facilities (DTF) which are part of the The Army Distributed Learning Program (TADLP) and administered out of the Army Enterprise Management Center at Fort Eustis, Virginia. The DTFs are located worldwide and, while locally administered and managed, are generally available. A typical DTF consists of 16 computer work stations with Internet access. We have completed preliminary coordination to utilize DTFs as a portal for the DCAP pilot tests during 2004.

Plan for Pilot Testing

Overall Test Administration

As we move into Phase II of the PerformM21 research program (Design Selection and Prototype Measure Development and Testing), the DCAP core assessment will be pilot tested. The pilot test is slated to begin in early 2004 and will target a test sample of 600 to 1000 Soldiers with representation from the Active Army, the Army National Guard, and United States Army Reserve. ARI has submitted Research Support Requests (RSR) asking for Soldiers in pay grade E4 with 24 or more months in service from a broad sample of MOS. At this point, ARI is in negotiations for the required troop support. Issues associated with large-scale troop deployments are complicating the process.

The plan is to deliver the DCAP pilot assessment via the Internet. Soldiers tasked to participate in the research will be instructed to schedule a time (within a specified time window) to go to their local DTF to take the assessment. Coordination with local DTF managers at each pilot test location is a requirement. Because DTFs are primarily established to serve a training function, using them for a test function will require some adjustments. For example, the pilot DCAP tests must be proctored, either with project staff or NCOs or other personnel specifically tasked and trained for that function.

In contrast to most research Soldier taskings, Soldiers participating in the DCAP pilot test must be identified several weeks before the pilot test is administered. This is needed because (a) Soldiers need to register with the DTF beforehand and the DTF must schedule the DCAP into their availability requirements, and (b) we need to provide the selected Soldiers with a DCAP test preparation guide.

Soldier Preparation

The goal of the pilot is to replicate, as much as possible, potential operational conditions. Although individual DCAP results will not be used or reported operationally, we intend to give Soldiers adequate information to prepare themselves for the test as if it were a “for real” examination including sample items and test references. The intent is to provide this information on-line using an Army Knowledge Online (AKO) link.

Soldier Feedback

We will ask pilot test participants for their reactions to the various aspects of the assessment program. This will include the assessment instrument itself, the use of DTFs as administration centers, the ease of use of the software, and the usefulness of the test preparation materials. We will incorporate their feedback in revising the various aspects of the program.

Data Analysis

After the pilot test administration, we will examine the item statistics (e.g., percent correct, point-biserial correlations) for each item. Items exhibiting poor item statistics will be flagged for review and modification or deletion. We will also analyze the data to determine whether there are differences in scores associated with gender, race/ethnicity, and with service component (Active Army, Army National Guard, United States Army Reserve). We will also analyze the results by job, most likely by collapsing MOSs into combat, combat support, and combat service support classifications. We will compute reliability estimates for the entire assessment, as well as for sections of the instrument (e.g., Common Tasks, History). We will also examine the correlation between scores on the four test sections, particularly Leadership and LeadEx scores.

Conclusions

The careful development of a blueprint for the content areas, subject areas, and tasks insures that the DCAP will cover the information that is important for Soldiers to know if they are to be promoted. Targeted reviews by subject matter experts (e.g., NCO Academy staff, content specialists, the ATPAT) ensures that the items are clearly written, are correctly keyed, are verifiable, and cover appropriate topics. The use of state-of-the-art software to deliver the assessment allows a high-fidelity presentation of the items, allows candidates to demonstrate both knowledge of an area and the ability to apply that knowledge in job-like conditions.

We will continue to develop the details for the pilot under Phase II. The assessment that will exist after the pilot test still will not be the same as we would recommend for a long-term program. Because of resource constraints, the blueprint is based on an abbreviated process rather than a thorough job analysis. It will be important to revisit this information as we move forward with the project.

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Appendix A **Outlines of Content Areas**

DCAP HISTORY/ARMY VALUES SECTION SUBJECT AREAS:

1. Colonial Times

- The history behind militias in the U.S.
 - The first militia regiments. (e.g., Where were they? Do they still serve?)
 - The militia system of defense.
- The Revolutionary War
 - Where did it start?
 - Involvement of other nations (e.g., France).
 - Notable Soldiers/commanders (e.g., Washington, Hale, Marion, Lafayette).
 - Significant battles (e.g., Battles of Saratoga, Cowpens).
- The War of 1812
 - What was over-riding strategy (e.g., push British out of Canada)?
 - Most significant battle? (e.g., Battle of New Orleans)
- The War with Mexico
 - The Alamo
 - Focus of the dispute (Texas)

2. Civil War to WWI

- The Civil War
 - Slavery's role (e.g., Lincoln's platform that he wouldn't extend it into territories led to the secession of SC with his election).
 - Famous Soldiers/commanders (e.g., Lee, Scott, Grant, Jackson).
 - Famous battles (e.g., Antietam, Shiloh, Gettysburg).
- The Frontier Settlements
 - Protecting settlers – pushing Native Americans onto reservations
 - Battle at the Little Big Horn
 - Exploring Alaska before formation of civilian government
- The Spanish-American War
 - Intervention in Cuba's war of liberation from Spain
 - What happened to get Congress to declare war?

3. The World Wars and Containment

- WWI
 - How did it start?
 - What prompted U.S. to get involved?
 - Famous battles (e.g., Ardennes - Rock of Marne).
 - Notable commanders (e.g., GEN John J. "Black Jack" Pershing).
 - The significance of V-Day.

- Between the Wars
 - National Defense Act of 1920
 - Stability operations in Soviet Russia and Siberia
 - Naval limitations treaty with Japan
 - Germany re-arms, Mussolini attacks Ethiopia, revolution in Spain
- WWII
 - What led to WWII?
 - What led to U.S. involvement? (e.g., Pearl Harbor)
 - Famous Battles (e.g., D-Day, Battle of the Bulge, Battle of Okinawa).
 - Atomic bombs
 - Notable leaders (e.g., MacArthur, Eisenhower, Patton).
- The Cold War
 - Struggle of power against Soviet Union and international communism
- Korea
 - What led to U.S. involvement?
- Vietnam
 - What led to escalation of U.S. commitment?

4. Post-Vietnam and the Volunteer Army

- The Volunteer Army
 - Grenada
 - Panama
- The End of the Cold War
- The Gulf War
 - What led to this?
 - Members of coalition that defeated Iraq?
- Relief in Africa
 - What led to U.S. involvement?
 - What was resolution?
- Haiti
 - What led to U.S. involvement?
 - What was resolution?
- The Balkans
 - What led to U.S. involvement?
 - What was resolution?
- The War on Terrorism
 - September 11, 2001
 - Operation Enduring Freedom
- The Second Gulf War (Operation Iraqi Freedom)

5. The Contemporary Operational Environment

- Increasing range of threats
 - Smaller, low-tech opponents using guerrilla/terrorist methods – to large, modernized forces

- Variables affecting operational environments
 - Physical; nature and stability of the state; military capabilities; technology; information; external organizations; sociological demographics; regional/global relationships; national will; time; economics
- Full spectrum operations
 - Offense
 - Defense
 - Stability
 - Support
- Homeland Security
- The Army Transformation

6. Courtesies and Customs

- The history behind the hand salute
 - From late Roman times to today
- The history behind the bugle call
 - Use in communication
 - Twilight Tattoo—Taps
- The history behind and colors of the Army Flag
 - First U.S. Army flag unfurled in 1956 in Philadelphia
 - Red, white, & blue selected as colors of U.S. flag
 - History of symbols (e.g., implements of warfare; the pike; the drum/drumstick; Phrygian cap; coiled rattlesnake)
 - Designed to meet the need for one banner to represent the entire Army

7. The Seven Army Values

- Historical and contemporary examples of what makes up each of the Army Values.

DCAP LEADERSHIP SECTION SUBJECT AREAS

1. Identify the leadership duties, responsibilities, authority, and requirements of officers, warrant officers, noncommissioned officers, and Department of the Army civilians.
2. Know the problem solving steps in decision making.
3. Know the steps in troop leading procedures (TLP).
4. Know and apply the backwards planning process.
5. Know the principles of discipline.
6. Identify team and group organizations and doctrine.
7. Know the principles of team building
8. Know the characteristics of effective counseling.
9. Enforce compliance with the Army's equal opportunity and sexual harassment policies.
10. Identify the legal implications of the Army's homosexual conduct policy.
11. Comply with and enforce the Uniform Code of Military Justice (UCMJ)
12. Comply with the Laws of War and the Geneva and Hague Conventions.
13. Comply with the requirements of the Code of Conduct.
14. Understand and enforce the principles of rules of engagement (ROE) and use of force.
15. Comply with host nation, federal, state, and local environmental laws and regulations.
16. Support unit and family readiness through the Army Family Team Building Program.
17. Know the requirements of the Army family and dependent responsibility policy.
18. Know the principles of financial management.
19. Resolve an ethical problem.
20. Interact with the news media.
21. Write in the Army style.
22. Conduct a risk assessment analysis.
23. Know the planning principles and application of METT-TSL (mission, enemy, terrain, troops available – time, space, logistics).

24. Know the content and organization of an operations order (OPORD).
25. Prepare and issue a warning order (WARNO).
26. Prepare and issue an oral OPORD.
27. Prepare and issue a fragmentary order (FRAGO).
28. Know the process and content of the professional development structure and the Noncommissioned Officer Education System (NCOES).
29. Know and apply the policies and procedures of the chain of command and of the noncommissioned officer support channel.
30. Know the Charge to the NCO, the NCO Vision, and the NCO Creed.
31. Know the function and use of the Enlisted Records and Evaluation Center (EREC).
32. Know the requirements and application of the decentralized (E2-E4) and the semi-centralized (E5-E6) promotion systems.
33. Know the purpose, format, and functioning of the Noncommissioned Officer Evaluation Record (NCOER) system.
34. Identify the principles of BE, KNOW, DO.
35. Identify the steps of assuming a leadership position.
36. Know Soldier recognition doctrine and principles.
37. Prepare for and conduct inspections and on-the-spot corrections.

DCAP TRAINING SECTION SUBJECT AREAS

1. Identify the roles and functions of initial training, institutional training, self-development training, professional military education, and unit training.
2. Identify the roles and responsibilities of the noncommissioned officer in training.
3. Identify unit training sequences, cycles, and events.
4. Know the principles and applications of Army training time management (Green, Amber, Red).
5. Identify the organization, purpose, and relationships of the Army Universal Task List (AUTL), mission-essential task lists (METL), collective tasks, Soldier tasks, and common tasks.
6. Identify the content, uses, sources, and locations of training publications [Soldier training publications (STP), Army Training and Evaluation Program Mission Training Plans (ARTEP-MTP), field manuals (FM), technical manuals (TM), training support packages (TSP), tactics, techniques, and procedures (TTP), lessons learned (LL)].
7. Identify categories, uses, and sources of Training Support System (TSS) technologies: training aids, devices, simulations, and simulators (TADSS).
8. Conduct training planning
9. Conduct training preparation.
10. Prepare for and conduct Sergeant's Time and opportunity training.
11. Prepare for and conduct training assessment.
12. Know the 10 principles of Battle Focused Training.
13. Prepare a training outline/lesson plan.
14. Conduct performance oriented training.
15. Prepare for and participate in training meetings.
16. Prepare for and present classroom instruction.
17. Prepare for and conduct battle drills and crew drills.
18. Prepare for and conduct drill and ceremonies.

19. Prepare for and conduct preparatory marksmanship training (PMT).
20. Train subordinates to perform an individual task.
21. Conduct team training/train a team.
22. Prepare and maintain a Leader Book.

Appendix B

Criticality Ratings for DCAP Subject Areas

Subject Area		
Mean¹	SD²	
Common Tasks: SL1		
4.78	0.67	First Aid
4.67	0.50	Communicate: Radio and Telephone
4.56	0.73	M16 Series Rifle
4.44	0.88	Nuclear, Biological, and Chemical (NBC)
4.33	0.71	Combat Techniques (Survive)
4.22	0.67	Defense Measures: Camouflage, SALUTE, OPSEC
3.67	1.12	M4 Series Carbine (M16 Variant)
3.67	0.71	Hand Grenades and Land Mines (M18A1 Claymore)
3.56	1.24	Navigate, Mounted and Dismounted
3.56	1.01	M9 9mm Beretta Pistol
3.44	1.42	M60 Medium Machine Gun
3.44	1.13	M249 Light Machine Gun Automatic Rifle
3.33	1.12	M136 Launcher AT4 Light Anti-Tank Weapon
3.22	1.30	Caliber .50 M2 Machine Gun
3.22	1.30	M203 40 mm Grenade Launcher (M16 Series)
3.11	1.36	M240B Medium Machine Gun
3.11	1.05	Remains Reporting and Handling
3.00	1.50	MK19 40mm Grenade Launcher Machine Gun
3.00	1.12	Individual Conduct and Laws of War
2.67	1.00	Crowd Control: Riot Baton and Formations
2.44	1.24	See: Surveillance and Identification
Common Tasks: SL2		
5.00	0.00	First Aid: MEDEVAC, Preventive Medicine
4.67	0.71	Nuclear, Biological, and Chemical (NBC)
4.56	0.88	Risk Management: Accident Prevention
4.56	0.73	Combat Techniques (Survive)
4.56	0.73	Equipment Checks: PMCS, Supply Discipline
4.44	0.73	Navigate: Map Overlays
3.89	0.60	Defense Measures: Squad Defense
3.56	1.01	Security and Control
3.44	1.01	Unit Operations: FRAGO, WARNO, Unit Movement
3.00	0.87	Remains Reporting & Handling
2.78	1.20	Administration/Management: Awards, NCOER, etc.
2.78	0.83	Individual Conduct and Laws of War

¹ Means reflect the averaged rating on a 5 point scale where 1 = lowest criticality and 5 = highest criticality.

² Standard Deviation. This reflects how much raters differed individually from the reported mean rating. Low SD numbers (approaching zero) indicate raters gave the same or close to the same rating. Higher SD numbers indicate individual raters differed more on their ratings.

Average criticality rating and standard deviation for DCAP subject areas (continued)

Mean	SD	Training
4.73	1.49	Train subordinates to perform an individual task.
4.73	2.24	Prepare for and conduct preparatory marksmanship training (PMT).
4.55	0.82	Identify the roles and responsibilities of the NCO in training.
4.27	2.15	Prepare for and conduct drill and ceremonies.
4.18	1.66	Conduct performance oriented training.
4.18	1.83	Prepare for and conduct crew drills.
4.09	2.95	Identify the roles and functions of initial training, institutional training, self-development training, professional military education, and unit training.
4.09	3.14	Know the principles and applications of Army training time management (Green, Amber, Red).
3.73	1.27	Identify the content, uses, sources, and locations of training publications, ARTEP-MTP, field manuals, technical manuals, training support packages, tactics, techniques, and procedures, lessons learned.
3.64	1.12	Know the principles of Battle Focused Training.
3.64	1.36	Conduct training preparation.
3.45	1.57	Prepare for and conduct Sergeant's Time and Opportunity training.
3.36	1.12	Prepare a training outline/lesson plan.
Leadership		
4.64	0.67	Identify the leadership duties, responsibilities, authority, and requirements of officers and NCOs.
4.00	1.08	Know the policies and procedures of the chain of command and of the NCO support channel.
4.00	1.08	Identify the principles of BE, KNOW, DO.
3.92	1.04	Know the principles of discipline.
3.85	0.99	Identify the risk management process.
3.77	1.17	Identify the steps of assuming a leadership position.
3.69	0.95	Know of the NCO Education System (NCOES).
3.69	1.25	Know the characteristics of effective counseling.
3.69	1.32	Understand the principles of the rules of engagement (ROE) and use of force.
3.62	1.19	Know the steps in troop leading procedures (TLP).
3.46	1.13	Prepare for & conduct inspections and on-the-spot corrections.
3.46	1.51	Resolve an ethical problem.
3.31	1.49	Know the problem solving steps in decision making.
2.92	0.86	Understand the requirements of the semi-centralized (E5-E6) promotion systems.
2.38	0.77	Know the principles of financial management.
1.77	0.83	Identify the Army's homosexual conduct policy.

Appendix C

Mean Weights and Standard Deviations for Common Task Areas

Mean ¹	SD ²	SL1 Subject Areas
17.42	7.42	First Aid
15.42	7.97	M16 Rifle / M4 Carbine / M9 Pistol
8.33	4.58	Nuclear, Biological, & Chemical (NBC)
8.17	3.04	Communicate: Radio & Telephone
7.92	3.90	Combat Techniques (Survive)
7.92	4.17	Navigate, Mounted & Dismounted
5.92	2.87	Defense Measures: Camouflage, SALUTE, OPSEC
5.67	3.37	M60 Machine Gun / M249 SAW / M240B
4.08	2.07	Hand Grenades & Land Mines (M18A1 Claymore)
4.08	1.24	Individual Conduct & Laws of War
3.17	1.59	Remains Reporting & Handling
3.08	1.78	Caliber .50 M2 Machine Gun
3.00	1.60	M203 mm Grenade Launcher (M16 Series)
2.92	1.73	M136 Launcher AT4 Light Anti-Tank Weapon
2.92	1.62	MK19 40mm Grenade Launcher Machine Gun
SL2 Subject Areas		
17.58	8.37	Combat Techniques (Survive)
17.50	5.78	First Aid: MEDEVAC, Preventive Medicine
16.42	4.60	Equipment Checks: PMCS, Supply Discipline, Property Accountability
14.08	3.73	Defense Measures: Squad Defense
12.25	5.17	Navigate: Map Overlays
11.25	5.12	Risk Management: Accident Prevention
10.92	6.26	Nuclear, Biological, & Chemical (NBC)

¹ Reflects the average ranking of individuals who distributed 100 points among the areas when asked how many points they would give each area for importance in testing. The number equals a percentage assignment and the total is 100%.

² Standard Deviation. This reflects how much raters differed individually from the reported mean rating. Low SD numbers (approaching zero) indicate raters gave the same or close to the same rating. Higher SD numbers indicate individual raters differed more on their ratings.

Appendix D

Means and Standard Deviations of Rankings of Tasks within Subject Areas for SL1 and SL2 Common Tasks

Mean ¹	SD ²	Skill Level 1
<i>First Aid</i>		
3.25	4.81	Evaluate a casualty
4.83	4.09	Perform Mouth-to-Mouth Resuscitation
5.33	2.74	Perform First Aid for Bleeding of an Extremity
6.67	3.89	Perform First Aid to Clear an Object Stuck in the Throat of a Conscious Casualty
6.67	3.92	Perform First Aid for Heat Injuries
6.92	3.80	Perform First Aid for an Open Abdominal Wound
7.25	3.57	Perform First Aid for an Open Chest Wound
7.25	2.67	Perform First Aid for an Open Head Wound
7.83	3.61	Perform First Aid to Prevent or Control Shock
9.25	2.30	Perform First Aid for Burns
9.92	3.48	Perform First Aid for a Suspected Fracture
10.00	5.17	Practice Individual Preventive Medicine Countermeasures
10.75	3.39	Perform First Aid for Nerve Agent Injury
10.75	3.31	Perform First Aid for Cold Injuries
13.25	2.80	Transport a Casualty
<i>Communicate: Radio & Telephone</i>		
1.92	1.00	Perform Voice Communications
2.00	0.60	Communicate Via a Tactical Radio in a Secure Net
2.08	0.90	Communicate Via a Tactical Telephone
<i>M16 Rifle / M4 Carbine / M9 Pistol</i>		
1.58	0.90	Maintain weapon
3.33	1.30	Load an M4 or M9
3.50	1.57	Engage targets with an M16-Series Rifle Using a Night Vision Sight AN/PVS-4
3.92	1.73	Engage targets with an M16-Series Rifle Using an AN/PAS-13 Series Thermal Sight
4.08	1.51	Engage targets with an M4 or M9
4.58	1.73	Unload an M4 or M9
<i>Nuclear, Biological, & Chemical (NBC)</i>		
2.17	1.95	Maintain Your Assigned Protective Mask
2.33	1.07	Protect Yourself from Chemical/Biological Contamination Using Your Assigned Mask

¹ Reflects the average ranking of the task within the subject area. Respondents picked the highest priority task as #1, second highest #2, etc., rating every task listed. Subject areas with only one task were not rated.

² Standard Deviation. This reflects how much raters differed individually from the reported mean rating. Low SD numbers (approaching zero) indicate raters gave the same or close to the same rating. Higher SD numbers indicate individual raters differed more on their ratings.

Means and standard deviations of rankings of tasks within subject areas for SL1 and SL2

Common Tasks (continued)

3.50	1.45	React to Chemical or Biological Hazard/Attack
3.75	1.42	Protect Yourself from NBC Injury/Contamination with MOPP Gear
5.00	1.76	Decontaminate Yourself & Individual Equipment Using Chemical Decon Kits
5.92	2.19	React to Nuclear Hazard/Attack
6.08	1.08	Detect Chemical Agents Using M8 or M9 Detector Paper
7.25	1.22	Respond to Depleted Uranium

Combat Techniques (Survive)

3.92	2.19	React to Direct Fire While Mounted
4.42	3.18	Move Under Direct Fire
5.25	3.36	Select Temporary Fighting Positions
5.42	2.68	React to Indirect Fire While Dismounted
6.00	2.59	React to Indirect Fire While Mounted
6.33	3.82	Perform Duty as a Guard
6.92	2.81	Mover Over, Through, or Around Obstacles (Except Minefields)
7.08	4.21	Operate a Vehicle in a Convoy
7.42	3.12	Construct Individual Fighting Positions
7.58	3.15	React to Unexploded Ordnance Hazards
7.83	4.26	Practice Noise, Light, & Litter Discipline
9.83	2.41	Plan Use of Night Vision Devices

Defense Measures

2.50	1.00	Implement Operations Security (OPSEC) Measures
2.58	1.68	Control Entry to & Exit from a Restricted Area
3.08	1.24	Report Intelligence Information
3.17	1.53	Camouflage Yourself & Your Individual Equipment
3.67	1.50	Camouflage Equipment

Hand Grenades & Land Mines (M18A1 Claymore)

1.92	1.08	Perform Safety Checks on Hand Grenades
2.50	0.90	Employ Hand Grenades
2.75	0.97	Employ an M18A1 Claymore Mine
2.83	1.40	Locate Mines by Probing

Navigate, Mounted & Dismounted

1.50	0.52	Navigate from One Point on the Ground to Another Point While Dismounted
1.50	0.52	Navigate from One Point on the Ground to Another Point While Mounted

M60 Machine Gun / M249 SAW / M240B

1.33	0.65	Maintain Weapon
2.83	0.72	Load M60 or M240B

Means and standard deviations of rankings of tasks within subject areas for SL1 and SL2
Common Tasks (continued)

3.17	1.47	Engage Targets with Weapon
3.75	1.22	Unload M60 or M240B
3.92	1.31	Prepare a Range Card for Weapon

M136 Launcher AT4 Light Anti-Tank Weapon

1.08	0.29	Prepare an M136 Launcher for Firing
1.92	0.29	Restore an M136 Launcher for Carrying Configuration

Caliber .50 M2 Machine Gun

1.50	0.80	Maintain a Caliber .50 M2 Machine Gun
2.50	1.00	Load a Caliber .50 M2 Machine Gun
3.33	1.44	Engage Targets with a Caliber .50 M2 Machine Gun
3.75	1.06	Unload a Caliber .50 M2 Machine Gun
3.92	1.31	Prepare a Range Card for a Caliber .50 M2 Machine Gun

M203 40 mm Grenade Launcher (M16 Series)

1.67	1.15	Maintain an M203 Grenade Launcher
2.42	1.08	Load an M203 Grenade Launcher
3.33	1.56	Engage Targets with an M203 Grenade Launcher
3.50	0.90	Correct Malfunctions of an M203 Grenade Launcher
4.08	1.08	Unload an M203 Grenade Launcher

Remains Reporting & Handling

1.58	0.79	Recover Isolated Remains
2.17	0.72	Evacuate Isolated Remains
2.25	0.87	Inter Isolate Remains (After Receiving Authorization)

MK19 40mm Grenade Launcher Machine Gun

1.67	1.23	Maintain an MK19 Machine Gun
2.67	0.89	Perform a Function Check on an MK19 Machine Gun
3.00	1.21	Load an MK19 Machine Gun
3.50	1.31	Engage Targets with an MK19 Machine Gun
4.17	1.27	Prepare a Range Card for an MK19 Machine Gun

Individual Conduct & Laws of War

1.58	1.00	Comply with the Uniform Code of Military Justice (UCMJ)
2.33	0.65	Comply with the Law of War & the Geneva & Hague Conventions
3.00	1.13	Comply with the Requirements of the Code of Conduct
4.42	1.62	Comply with the Army's Equal Opportunity & Sexual Harassment Policies
5.08	1.38	Interact with News Media
5.08	0.51	Support Unit & Family Readiness Through the Army Family Team Building (AFTB) Program

*Means and standard deviations of rankings of tasks within subject areas for SL1 and SL2
Common Tasks (continued)*

Skill Level 2

First Aid

1.83	0.83	Request Medical Evacuation
2.00	0.74	Evacuate Casualties
2.17	0.94	Implement Preventive Medicine Measures (PMM)

Nuclear, Biological, & Chemical (NBC)

3.33	2.15	Protect Yourself from NBC Injury/Contamination When Changing MOPP Gear
5.67	2.53	Identify Chemical Agents Using M256-Series Chemical Agent Detector Kit
9.58	1.98	Measure Radiation Dose Rate & Total Dose
5.58	2.84	Conduct Unmasking Procedures
6.58	2.43	Supervise the Crossing of a Contaminated Area
6.58	2.61	Submit an NBC 1 Report
2.58	1.73	Implement MOPP
9.25	1.42	Supervise the Employment of NBC Markers
6.17	2.12	Supervise Unit Preparation for an NBC Attack
7.50	2.50	Report NBC Information Using NBC 4 Report
3.17	3.19	Conduct a Mask Fit Test

Survive (Combat Techniques)

2.58	1.31	Adjust Indirect Fire
3.50	0.52	Use Visual Signaling Techniques
2.08	1.16	Supervise Construction of a Fighting Position
1.83	0.58	Establish an Observation Post

Equipment Checks

2.00	1.13	Supervise PMCS
3.92	1.24	Enforce Compliance with Supply Discipline Procedures
3.83	0.72	Enforce Property Accountability Policies
3.92	0.79	Enforce Compliance with Property Accountability Policies
1.33	0.49	Inspect Equipment for Accountability, Cleanliness, & Serviceability

Navigate

N/A	Use a Map Overlay
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Risk Management

N/A	Employ Accident Prevention Measures & Risk Management Process
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Defense Measures

N/A	Conduct a Defense by a Squad
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